

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Original): A process of producing aldehydes in a continuous hydroformylation process of continuously reacting an olefinic unsaturated compound with carbon monoxide and hydrogen in the presence of a rhodium-phosphite based complex catalyst and continuously separating at least one component from a reaction product, the process being characterized in that at least a part of an aldehyde product and water are taken out as a mixed vapor flow from a catalyst-existent region in the process, and at least a part thereof is fed outside the catalyst-existent region as it stands as the vapor or as a condensate after cooling, to reduce the water concentration within the catalyst-existent region.

Claim 2 (Original): The process of producing aldehydes according to claim 1, wherein the continuous hydroformylation process is a liquid circulation type hydroformylation process in which a reaction product containing at least the rhodium-phosphite based complex catalyst and aldehyde product taken out from a reactor is fed into a catalyst separation step to separate the aldehyde product, followed by circulation into the reactor.

Claim 3 (Original): A process of producing aldehydes in a liquid circulation type hydroformylation process of taking out a reaction product containing at least a rhodium-phosphite based complex catalyst and an aldehyde product obtained by continuous hydroformylation reaction of an olefinic unsaturated compound with carbon monoxide and hydrogen in the presence of a rhodium-phosphite based complex catalyst from a reactor and feeding it into a counter-current contact column; subjecting it to counter-current contact with a raw material gas to recover the unreacted olefinic unsaturated compound; and after gas-liquid separation, subjecting a liquid phase to separation and recovery of the aldehyde product in a catalyst separation step and then circulating it as a reaction medium into the

reactor, the process being characterized in that at least a part of the aldehyde product and water are taken out as a mixed vapor flow from a catalyst-existent region in the process, and at least a part of the mixed vapor flow is taken out as it stands as the vapor or as a condensate after cooling and then fed into a step outside the catalyst-existent region to reduce the water concentration within the catalyst-existing region.

Claim 4 (Original): A process of producing aldehydes in a liquid circulation type hydroformylation process of taking out a reaction product containing at least a rhodium-phosphite based complex catalyst and an aldehyde product obtained by continuous hydroformylation reaction of an olefinic unsaturated compound with carbon monoxide and hydrogen in the presence of a rhodium-phosphite based complex catalyst from a reactor; after gas-liquid separation, subjecting the resulting liquid phase to separation and recovery of the aldehyde product in a catalyst separation step and then circulating it as a reaction medium into the reactor; and bringing the aldehyde product separated in the catalyst separation step into counter-current contact with a raw material gas in a counter-current contact column to recover the unreacted olefinic unsaturated compound, the process being characterized in that at least a part of the aldehyde product and water are taken out as a mixed vapor flow from a catalyst-existent region, and at least a part thereof is fed as it stands as the vapor or as a condensate after cooling into a step outside the catalyst-existent region to reduce the water concentration within the catalyst-existing region.

Claim 5 (Original): The process of producing aldehydes according to claim 4, wherein at least a part of the mixed vapor flow containing at least a part of the aldehyde product and water taken out from the catalyst-existent region is taken out as it stands as the vapor or as a condensate after cooling and then fed into the counter-current contact column.

Claim 6 (Original): The process of producing aldehydes according to claim 1, wherein the continuous hydroformylation process is a fixed catalyst type continuous

hydroformylation process in which a reaction product containing the aldehyde product, unreacted olefinic unsaturated compound and by-products taken out from a reactor is fed into a separation step to separate the aldehyde product.

Claim 7 (Original): The process of producing aldehydes according to claim 6, wherein the amount of the aldehyde contained in the reaction medium and a high-boiling product formed in the reaction process in the reactor is 0.6 or more in terms of a weight ratio of aldehyde/high-boiling product.

Claim 8 (Currently Amended): The process of producing aldehydes according to claim 6 or 7, wherein the continuous hydroformylation process includes a catalyst reactivation step.

Claim 9 (Currently Amended): The process of producing aldehydes according to ~~any one of claims 1 to 8~~ claim 1, wherein the olefinic unsaturated compound is reacted with carbon monoxide and hydrogen at a temperature of from 30 °C to 90 °C.

Claim 10 (Currently Amended): The process of producing aldehydes according to ~~any one of claims 1 to 9~~ claim 1, wherein at least a part of the aldehyde product and water are taken out as a mixed vapor flow from the reactor and a gas-liquid separator equipped in the reactor, and at least a part thereof is fed as it stands as the vapor or as condensate after cooling outside the catalyst-existent region, thereby reducing the water concentration within the catalyst-existent region.

Claim 11 (Currently Amended): The process of producing aldehydes according to ~~any one of claims 1 to 10~~ claim 1, wherein the amount of water contained in the mixed vapor flow to be taken out from the catalyst-existent region is 30 % or more of the amount of water to be fed into the reactor and water to be formed within the reactor, and at least a part of water contained in the mixed vapor flow is fed outside the catalyst-existent region.

Claim 12 (Currently Amended): The process of producing aldehydes according to ~~any one of claims 1 to 11~~ claim 1, wherein the amount of water contained in the mixed vapor flow to be taken out from the catalyst-existent region is 30 % or more of the amount of water to be fed into the reactor and water to be formed within the reactor, and 30 % or more of the amount of water contained in the mixed vapor flow is fed outside the catalyst-existent region.

Claim 13 (Currently Amended): The process of producing aldehydes according to ~~any one of claims 1 to 12~~ claim 1, wherein the amount of water to be fed outside the catalyst-existent region is 30 % or more of the amount of water to be fed into the reactor and water to be formed within the reactor.

Claim 14 (Currently Amended): The process of producing aldehydes according to ~~any one of claims 1 to 13~~ claim 1, wherein the olefinic unsaturated compound is propylene.